The Spleen not Taken: Differences in Management and Outcomes of blunt splenic injury in teenagers cared for by Adult and Pediatric trauma teams in a Single institution

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We have nothing to disclose
Wake Forest Baptist Trauma services

- Brenner's Children's Hospital
  - Level 1 trauma center for children <16 years old

- WFBMC
  - Level 1 trauma center for ≥16 years old
Splenic trauma protocols

- Pediatric
  - All Stable patients, regardless of grade, are admitted for Serial abdominal exams, Hemodynamic monitoring and Serial CBC

- Adult
  - Stable Grade I-II are admitted for Serial Abdominal exams, Hemodynamic monitoring and Serial CBC
  - All Stable patients with Grade III or higher get IR consult
  - Miller et al, 2014: decreased failure rate of NOM from 15 to 5%
Does the routine use of IR angiography reduce the failure rate of Non Operative Management in Adolescents?

Methods

- Retrospective review from 2007-2014 trauma data base of 15 and 16 year olds with blunt splenic trauma
Treatment Groups

Significant difference in treatment (P= .003)
## Severity of Injury

<table>
<thead>
<tr>
<th></th>
<th>Average age (years)</th>
<th>Average Grade</th>
<th>Extravasation seen on CT</th>
<th>Pseudoaneurysm on CT</th>
<th>ISS score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult Service (N=23)</td>
<td>16.43</td>
<td>2.74</td>
<td>2</td>
<td>4</td>
<td>24.3</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>8.70%</td>
<td>17.40%</td>
</tr>
<tr>
<td>Pediatric Service (N=22)</td>
<td>15.46</td>
<td>2.54</td>
<td>3</td>
<td>4</td>
<td>23.64</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>13.60%</td>
<td>18.18%</td>
</tr>
<tr>
<td>P value</td>
<td>0.688</td>
<td>0.598</td>
<td>0.9447</td>
<td>0.608</td>
<td></td>
</tr>
</tbody>
</table>
## Outcomes

<table>
<thead>
<tr>
<th>Delayed Splenectomy</th>
<th>30 day mortality</th>
<th># of Units PRBC</th>
<th>ICU days</th>
<th>LOS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adult Service (N=23)</td>
<td>3</td>
<td>1</td>
<td>1.72</td>
<td>5.14</td>
</tr>
<tr>
<td></td>
<td>13.64%</td>
<td>3.85%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pediatric Service (N=22)</td>
<td>0</td>
<td>2</td>
<td>1.22</td>
<td>3.52</td>
</tr>
<tr>
<td></td>
<td>0.00%</td>
<td>8.70%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

P value

0.079  0.524  0.628  0.414  0.918
Discussion

- Adolescents are treated by different protocols with no improvement in outcomes.
- Routine use of IR angiography was not associated with improved failure rates of NOM in Adolescents.
- At what age does IR begin to improve outcomes?
Discussion continued

- Retrospective, non randomized with small number of patients

- 3/9 patients underwent angiography without embolization - all risk and no therapeutic benefit